

**REMARKS/ARGUMENTS**

The Examiner is thanked for the Official Action dated January 22, 2010. This amendment and request for reconsideration is intended to be fully responsive thereto.

Claims 14 and 31 were objected to because of the minor informalities. Claims 14 and 31 have been amended to overcome the Examiner's objections. No new matter has been added.

Claims 1, 17, 18 and 31 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1, 17, 18 and 31 have been amended to overcome the Examiner's rejections. No new matter has been added.

Claims 1 and 3-32 have been amended to correct minor informalities. No new matter has been entered.

Claims 1, 3, 4, 6, 8, 10, 11, 30 and 31 were rejected under 35 U.S.C. 102(b) as being anticipated by Coupland et al. (USPN 4,821,518). The applicant respectfully disagrees.

Regarding claim 1: the Examiner erroneously alleges that Coupland discloses an assistance device (5, 6, 7, 8) comprising "a regulation means (5, 6, 7, 8) which makes the value of the assistance force vary according to the travel of the clutch control pedal in accordance with a predetermined assistance law".

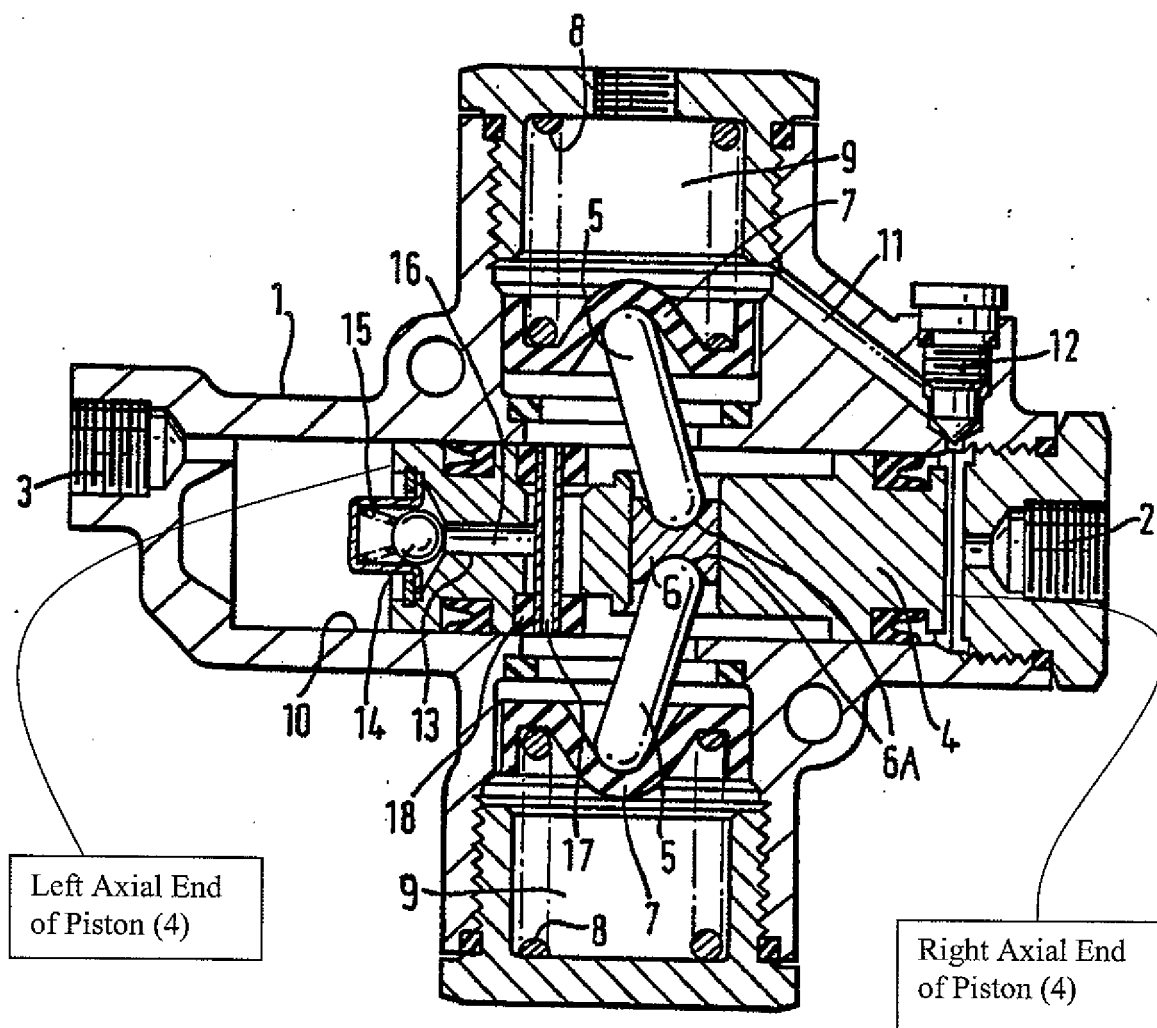
First, the Examiner interprets the same combination of elements (5, 6, 7, 8) of Coupland as both the assistance device and the regulation means varying the value of the assistance force. Thus, it is not clear which element of the assistance device (the combination of elements (5, 6, 7, 8)) of Coupland the Examiner considers as the regulation means.

Second, the Examiner notes that “the force as a function of the piston travel can be modeled by one of ordinary skill in the art” (emphasis added). In other words, the Examiner indirectly admits that Coupland fails to disclose the regulation means varying the value of the assistance force (Fa) according to the travel (CP) of the clutch control pedal in accordance with a predetermined assistance law. However, anticipation under Section 102 requires that a prior art reference disclose every claim element of the claimed invention. *E.g., Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1574, 1 U.S.P.Q.2d 1081 (Fed. Cir. 1986). Anticipation must be found in a single reference. *E.g., Studiengesellschaft Kohle, m.b.H. v. Dart Indus., Inc.*, 726 F.2d 724, 726-27, 220 U.S.P.Q. 841 (Fed. Cir. 1984). The absence of any element of the claim from the cited reference negates anticipation. *E.g., Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 715, 223 U.S.P.Q. 1264 (Fed. Cir. 1984).

Therefore, for this reason alone, the applied document, *i.e.*, the ‘518 patent to Coupland, does not meet this standard of anticipation. Accordingly, Applicant respectfully traverses this rejection.

Further regarding claim 6: the Examiner erroneously alleges that the transmission member (6) of Coupland is arranged at an axial end (the axial ends on 4 contacting 6). As clearly

shown in Fig. 1 of Coupland, reproduced below, the transmission member (6) of Coupland is arranged in the middle of the piston (4) and remote from the axial ends thereof.



In other words, Coupland fails to disclose the transmission member arranged at an axial end of the assistance piston, as recited in claim 6. Accordingly, the rejection of claim 6 under 35 U.S.C. 102(b) as being anticipated by Coupland is improper.

Further regarding claim 8: the Examiner erroneously alleges that the assistance cylinder (1) of Coupland comprises at least one discharge orifice (13). As clearly shown in Fig. 1 of Coupland, reproduced above, the piston (4) of Coupland comprises the piston passage (discharge orifice) (13), not the assistance cylinder as recited in claim 8. However, in order to expedite the prosecution of the present application, claim 8 has been further amended to specify that the assistance cylinder (30) comprises at least one discharge orifice (52, 102, 150) formed in the body (56) thereof. The support for this amendment could be found in Fig. 9 and page 29, line 32 – page 30, line 1 of the present application. No new matter has been added.

Coupland fails to disclose the assistance cylinder comprising at least one discharge orifice formed in the body thereof, as recited in claim 8. Accordingly, the rejection of claim 8 under 35 U.S.C. 102(b) as being anticipated by Coupland is improper.

Further regarding claim 11: in order to expedite the prosecution of the present application, claim 11 has been further amended to specify that the elastic element (106) is compressed when the assistance piston (32) is in the upstream engagement position and is expanded when the assistance piston (32) is in the downstream disengagement position. The support for this amendment could be found in Fig. 9 and page 20, lines 9-14 of the present application. No new matter has been added.

First, contrary to the Examiner's allegations, Coupland fails to disclose the elastic element which stores energy during the engagement phase of the clutch, and which restores the energy during the disengagement phase in order to produce the assistance force. As clearly

disclosed by Coupland, the actuation of the clutch pedal moves the piston (4) to the left against the action of the toggle springs (8) (see col. 2, lines 7-10 of Coupland). In other words, during the disengagement phase of the clutch, the spring (8) of Coupland resists the movement of the piston (4), i.e., accumulates and stores energy, not restores (i.e., releases) the energy as recited in claim 11. Moreover, as further disclosed by Coupland, the piston is returned to its rest position without further aid from the clutch spring (see col. 2, lines 23-25 of Coupland). In other words, during the engagement phase of the clutch, the spring (8) of Coupland does not accumulate and store energy, as recited in claim 11.

Second, Coupland fails to disclose the elastic element compressed when the assistance piston is in the upstream engagement position and is expanded when the assistance piston is in the downstream disengagement position, as recited in claim 11.

Accordingly, the rejection of claim 11 under 35 U.S.C. 102(b) as being anticipated by Coupland is improper.

Further regarding claim 30: in order to expedite the prosecution of the present application, claim 30 has been further amended to specify that the elastic element (106) is compressed when the assistance piston (32) is in the upstream engagement position and is expanded when the assistance piston (32) is in the downstream disengagement position. The support for this amendment could be found in Fig. 9 and page 20, lines 9-14 of the present application. No new matter has been added.

As disclosed by Coupland, the piston is returned to its rest position without further aid from the clutch spring (see col. 2, lines 23-25 of Coupland). In other words, during the engagement phase of the clutch, the spring (8) of Coupland is not compressed, as recited in claim 30. Accordingly, the rejection of claim 30 under 35 U.S.C. 102(b) as being anticipated by Coupland is improper.

Further regarding claim 31: in addition to the above arguments regarding the patentability of claim 1, the Examiner notes that “the relationship between the assistance force provided by the regulation means and the upstream and downstream chambers can be modeled by one of ordinary skill in the art” (emphasis added). In other words, the Examiner indirectly admits that Coupland fails to disclose the regulation means varying the value of the assistance force according to the upstream pressure, or the downstream pressure, or a combination of the two pressures. However, anticipation under Section 102 requires that a prior art reference disclose every claim element of the claimed invention. Anticipation must be found in a single reference. The absence of any element of the claim from the cited reference negates anticipation.

Moreover, those skilled in the art would readily realize that the combination of elements (5, 6, 7, 8) of Coupland (basically, the assistance force of the spring 8) is not depends on the the upstream pressure, or the downstream pressure, or a combination of the two pressures, and depends only on elasticity of the springs (8 and 9).

Accordingly, the rejection of claim 31 under 35 U.S.C. 102(b) as being anticipated by Coupland is improper.

Claims 12-17 were rejected under 35 U.S.C. 103(a) as being unpatentable over Coupland in view of Stotz (US 3,200,597). The applicant respectfully disagrees.

The Examiner concedes that Coupland does not disclose that the regulation means in the form of a cam mechanism which is driven by the axial movement of the piston and which regulates the assistance force produced by the elastic element during the disengagement phase. The Examiner then cites Stotz that allegedly “discloses a hydraulic control system in which the regulation means (12, 14, 18, 19, 22, 28, 29) is a cam mechanism (28, 29) which is driven by the axial movement of the piston (8) and which regulates the assistance force produced by an elastic element (18) during the disengagement phase”.

The Examiner alleges that it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the regulation means (5, 6, 7, 8) of Coupland with the actuating mechanism of Stotz in order to provide the hydraulic control system of Coupland with varying assistance force in accordance with predetermined assistance law based on the curved cam tracks 29 of Stotz.

Those skilled in the art would understand that the modification of Coupland to replace the booster device (5, 6, 7, 8) of Coupland with the actuating mechanism of Stotz would require a wholesale redesign of Coupland. However, substantial reconstruction and redesign of the elements of Coupland is not possible or permitted under the patent law. See MPEP 2143.01.VI.

Also, it is not clear how the teaching of Coupland and Stotz can be combined and reconciled. The Examiner alleges that in modifying the hydraulic control system of Coupland, the regulation means of Stotz may be attached to the right side of piston (4) of Coupland in an enlarged upstream hydraulic chamber with the spring (18) of Stotz pressed against input port (2) of Coupland.

First, if the spring (18) of Stotz is attached to the right side of the piston (4) of Coupland in upstream hydraulic chamber and pressed against input port (2) of Coupland as suggested by the Examiner, then the spring (18) will bias the piston (4) of Coupland toward the downstream position thereof. However, as clearly disclosed by Coupland, the actuation of the clutch pedal moves the piston (4) to the left against the action of the toggle springs (8) (see col. 2, lines 7-10 of Coupland). In other words, during the disengagement phase of the clutch, the spring (8) of Coupland resists the movement of the piston (4), i.e., biases the piston (4) of Coupland toward the upstream position thereof.

Second, as further disclosed by Coupland, the piston is returned to its rest position without further aid from the clutch spring (see col. 2, lines 23-25 of Coupland). Contrary to the booster device (5, 6, 7, 8) of Coupland, during the engagement phase of the clutch, the spring (18) of Stotz would **prevent** the engagement of the clutch as it would resist the movement of the piston (4) of Coupland toward the upstream position thereof.



Third, those skilled in the art would understand that by enlarging the upstream hydraulic chamber of Coupland, the pressure balance between the upstream and downstream hydraulic chambers of Coupland will be changed.

Fourth, Coupland discloses the clutch booster device including the cylinder 1 remote from the clutch master cylinder and a hydrostatic slave cylinder so that the piston (4) of Coupland is actuated by hydraulic pressure and defines upstream and downstream hydraulic chambers. Contrary to Coupland, Stotz discloses the brake system having the piston (8) mechanically actuated within the master cylinder (7) directly by the piston rod (6), not by the hydraulic pressure as in Coupland.

Thus, it is clear that the modification of Coupland to replace the booster device (5, 6, 7, 8) of Coupland with the actuating mechanism of Stotz suggested by the Examiner, will change the principle of operation of Coupland, which is not permitted. See MPEP 2143.01(VI). In fact, as argued above, the Examiner's modification would render the prior art invention being modified unsatisfactory for its intended purpose. See MPEP 2143.01(V).

Furthermore, Stotz fails to disclose the cam mechanism driven by the axial movement of the piston, as recited in claim 12. In fact, the cam mechanism of Stotz is driven by the sleeve (14) directly connected to the brake pedal (5), and not by the piston (8) reciprocating within the master brake cylinder (7).

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Accordingly, the rejection of claims 12-17 under 35 U.S.C. 103(a) over Coupland and Stotz is improper.

The examiner also indicated that claim 18 would be allowable if rewritten in independent form including all the limitation of the base claim and any intervening claims. Accordingly, claim 18 has been rewritten in independent form including all the limitation of the base claim 1 and the intervening claims 11-17. Thus, claim 18 is in condition for allowance.

New claim 33 has been added.

It is respectfully submitted that claims 1, 3, 4, 6, 8, 10-18, 30 and 31 define the invention over the prior art of record and are in condition for allowance, and notice to that effect is earnestly solicited. Should the Examiner believe further discussion regarding the above claim language would expedite prosecution they are invited to contact the undersigned at the number listed below.

Respectfully submitted:

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